BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

The ABCs of PRTs

Back in 1978, when the National Synchrotron Light Source (NSLS) was starting up, funds were needed for instrumenting and manning the facility. The Department of Energy paid for its construction and operation, but any one institution would be hard put to finance instruments and manpower at 44 beam ports. So BNL came up with the idea of Participating Research Teams (PRTs).

At the NSLS

The PRT policy has been effective because it makes good use of both time and money. The way it works is that a user group with a long-range program, approved by the NSLS Program Advisory Committee, proposes to build an instrument, fund it and operate it. In return, the team gets up to 75% guaranteed usage of the beam line and the other 25% is made available to general users. For these users, the time is free if they are doing basic, publishable research. If the research is proprietary, then they pay charges. Among the organizations that make up PRTs at the Light Source are Exxon, SUNY at Stony Brook, Oak Ridge National Laboratory and the National Bureau of Standards.

Each of the ports can take two or three beam lines, and, currently, 60 beam lines are operating. About 75% of the lines have been designed and constructed by PRTs. During FY 1984, 270 researchers worked at the NSLS and, in the next two years as more ports open, staff scientist Roger Klaffky says that "we expect to see as many as 250 people in a 12-hour shift."

As a result of the PRT policy, there is a wealth of instrumentation available at the Light Source, and everyone has access to it from the largest corporation to the smallest research group.

At the HFBR

Now the policy, suitably adapted, is taking hold at another of BNL's national user facilities, the High Flux Beam Reactor (HFBR). But the situation is different.

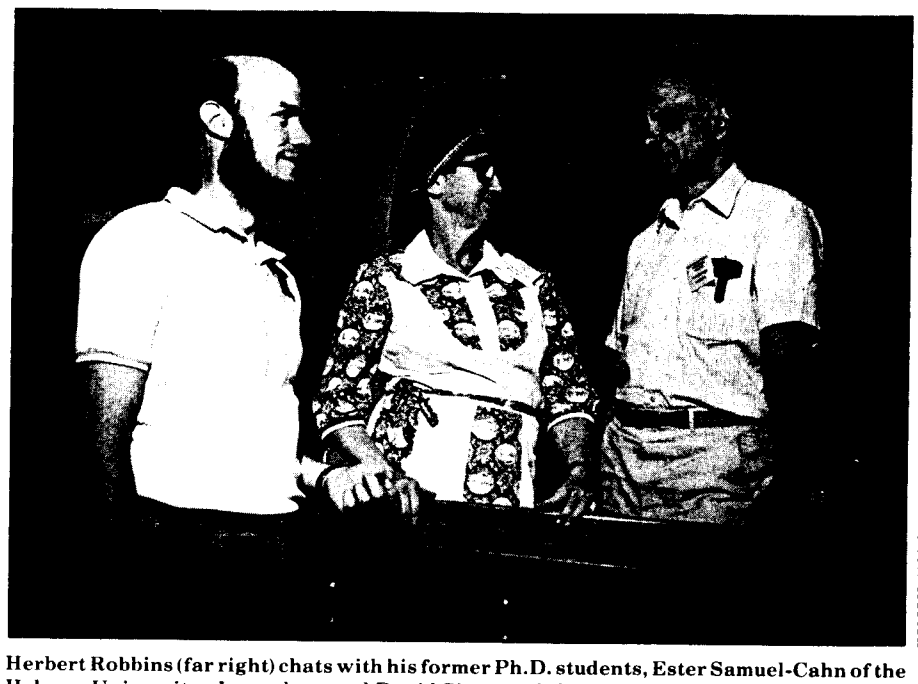
The HFBR has been in operation for 19 years. The nine beam ports have been operated by BNL groups from biology, chemistry, solid state physics and nuclear physics. Out of their research budgets, they paid operating charges according to how many beam holes they could access. Each group set up its own user policy. Some had proposal committees, but the other groups dealt with requests individually, and outside users worked at the reactor as collaborators. It was just a matter of scheduling and suitability of experiments. In all, 241 users were counted at the HFBR during FY 1984.

These arrangements continued until October 1982 when, for the first time, the reactor was funded as a national user facility by the Materials Sciences Division of the Department of Energy. Operations money no longer came out of a department's research program. "At that time," says Victor Emery, who is responsible for HFBR experimental programs, "We felt that it was necessary to broaden the base of neutron scattering, and we needed to adopt a different user policy."

Much of the instrumentation was already in place at the reactor, and little space was available for anything new. Nevertheless, BNL groups wanted outside users to be truly involved, so they formed PRTs on existing instruments in which the outside users are equal to or greater in number than the BNL researchers. They contribute to the upgrading of the instruments and, if necessary, to their replacement. In return, they can carry out their own experiments for up to a maximum of 75% of beam time. General users are able to submit research proposals for the balance of the beam time.

One beam line, H-4 satellite, has been made available to outside groups wishing to set up substantial research groups of their own. Currently, the University of Illinois and the University of Pennsylvania take one-half the beam time; a PRT in process of building a new instrument has one-quarter time; BNL chemists use the remaining one quarter and keep the line operating. This beam line shares the port with the U. S./Japanese spectrometer which has been constructed under an agreement between the U. S. and Japan.

(Continued on page 2)



Peter Horton

Herbert Robbins (far right) chats with his former Ph.D. students, Ester Samuel-Cahn of the Hebrew University, Jerusalem, and David Siegmund, Stanford University, at the mathematics symposium on "Adaptive Statistical Procedures and Related Topics" held Saturday through Tuesday, June 8-11. The symposium was held in Berkner Hall in honor of Professor Robbins's 70th birthday, and was sponsored by the National Science Foundation, the Army Research Office, the Air Force Office of Scientific Research and the Department of Energy.

The Man Behind the Math

Last week's four-day symposium on "Adaptive Statistical Procedures and Related Topics," was held here in honor of one man — a man for whom math has built a fantastic career, and yet whose lifelong interests and concerns extend far beyond the study of mathematics.

This is Herbert Robbins, Higgins Professor of Mathematical Statistics at Columbia University and Senior Mathematician at Brookhaven's Department of Applied Mathematics. He is well known to the mathematical community for his contributions to the area of statistics, and his theories are widely discussed and debated, but who really knows about the man behind the mathematics?

In a recent interview, Robbins said that mathematics was not an inherited family tradition. "I came from a background with no academic interests and certainly no mathematical interests, and I myself did not particularly care for mathematics as a precollege student. When I got to college I realized that mathematics was one of the subjects of which I was very ignorant and that this would be my last chance to learn anything about it. So I signed up for freshman mathematics at Harvard in 1931 with the idea that it couldn't hurt me to learn something that I wasn't naturally good at and which would be a personal challenge."

This seems like a modest enough start to a career in the field of mathematics, yet there is more to it than Robbins suggests. In his freshman year at Harvard, he was chosen by the math department to be a member of a Harvard team to compete against the military academy at West Point in a mathematics competition. His association with one of the math professors during this time prompted him to stay at Harvard in order to earn a Ph.D. in mathematics. After receiving his degree, he joined the Institute for Advanced Study at Princeton.

In the ensuing years, Robbins became Higgins Professor of Mathematical Statistics at Columbia University, was elected to the National Academy of Sciences, has been involved in two government-sponsored research projects for the National Science Foundation and the National Institutes of Health, has numerous publications, children, a lovely wife, and has maintained considerable *joie de vivre*.

"I don't feel very different from the way I did when I was sixteen. My mind seems very much the same as it always was. I'd like to be allowed to continue to do what I have been doing. A retirement to writing my memoirs, or even some more papers, is not at all what I anticipate. I would miss the association with colleagues and especially with students. Anyway, my main preoccupation now is certainly not with the past, but with the future, as though I were a graduate student just getting his degree and trying to decide what he wants to do with the rest of his life. I have the same feeling about my life now: 'What am I going to do when I grow up?' — I don't know."

Robbins has always been inclined toward literature, history, philosophy, and the like, rather than toward mathematics or science. "In spite of this," he says, "I'm rather pleased with the way it has turned out."

Robbins's interests match his concerns. His wish is to contribute to a world in which science will provide solutions for old problems rather than be the source of new problems for humanity. "I want to get my ideas down so that others can establish what's really valuable about them."

He fears for the future of the younger generation, but his own lifetime still leaves him optimistic. "What is important is not to think deep thoughts about the future of man, about populating space and about avoiding atomic catastrophe and so on and so forth. What is really important is to have fun, to enjoy life and to do things for the love of doing them."

Robbins is not only a mathematician, but a bit of a philosopher and social scientist as well. "I have a view of life which seems to be not quite the ordinary one. I would like, in some sense, to harmonize my experiences of art, philosophy, psychology and so on with my experience in the scientific enterprise. The real point of life is knowledge and understanding and not propagation or the development of GNP. BNL is a good place to be since it is not in business to make money or to extend its power base. I am glad to have been a member of this community."

— Alexander Laszlo

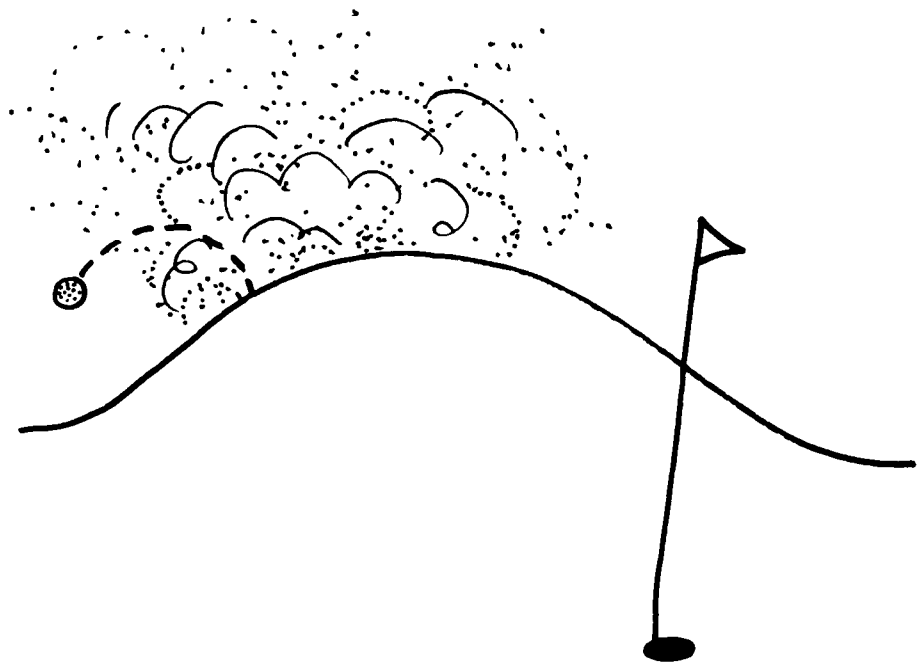
(Alexander Laszlo is a summer student in the Public Relations Office).

Alex Reben

The week before last, the Structural Analysis Division of the Department of Nuclear Energy (DNE) hosted a "Workshop on Seismic and Dynamic Fragility of Nuclear Power Plant Components," sponsored by the U.S. Nuclear Regulatory Commission (NRC). The workshop attracted 75 participants from industry and government, who discussed the fragility of electrical, control and mechanical equipment used in nuclear power plants and subject to earthquakes and other geological disturbances. According to Mechanical Engineer Charles Hofmayer, workshop organizer, the conference succeeded in pointing out existing data, which, if reevaluated and coordinated, could yield better estimates of how well nuclear power plant components will operate after earthquakes. DNE has received a grant from the NRC to collect and better define this fragility data. Pictured are: (from left) Workshop Organizer Kamal Bandyopadhyay, Conference Coordinators Liz Gilbert, Diana Votruba and Joan Murray, Invited Speaker James Richardson of the NRC, Hofmayer, Invited Speakers Guy Arlotto and James Knight of the NRC.

Reporter's Notebook:

Keep Your Eye on the Ball



If you are not a golfer, you probably think of the game as a tedious round of lugging a bag of clubs and hitting a dimpled little ball up and down, apparently with the goal of putting the ball in various holes around the course. Or, you may have watched the pros on the tube and, the way they play it, the game looks easy.

Well, believe me, it's enough to make you weep. Golf can either develop your character, or ruin it. The game is a constant test of your mental health, stamina and coordination. One day you're playing well and feeling on top of the world, the next day you're so bad, you wish you'd never been born. You can never conquer the game no matter how expert you get, but once you're hooked, you'll never give it up.

The game is played on a course divided into 18 holes. From a distance it appears to be a pleasant, grassy terrain with trees, little lakes and what looks like sandy little beaches. A tranquil spot. Not so. The place is a minefield. With good reason, the little lakes are known as water hazards and the little beaches as sand traps, or bunkers. Golf course architects spend their lives gleefully plotting how they can spot trees, water and sand, so that you will not be able to get the ball in the cup without a humiliating score.

Grass is cut different lengths. Fairways are lanes down the middle of the course, and the grass is cut evenly like a carpet. But, naturally, they can't leave it like that. Growing alongside the fairways is taller grass, known as the rough. And it is rough because the ball likes to sit in there and defy your efforts to get it out.

Don't tell me balls are inanimate objects. They are perverse little devils who like to roll when they should stop, have a penchant for long grass and delight in embedding themselves in sand.

At the end of every hole is a closely shaven green, and on it is a cup designated by a long pole with a flag on it, known as the pin. When you reach it, you putt your ball into the cup. So what's the problem? The problem is that this smooth surface cunningly conceals little hills and valleys which take your ball away from its destination, and some sinister force rolls the ball past the cup, instead of into it. It's heartbreaking.

Contrary to most games, in golf the lowest score is the best score. You are supposed to get around in as few strokes as possible. With most hackers, adding up the score can be a humbling experience, and a well bred opponent will not yell out, "Hey! What did you say your score was?"

Speaking of scores, three words are heard most often in golf: par, birdie, bogey. Par means the number of strokes considered necessary to complete a hole in expert play. Birdie is one stroke less than par and cause for jubilation. Bogey is one stroke more than par and, with many players, still cause for jubilation. In fact, most of us never see a birdie, seldom a par and even bogeys aren't too frequent. Our scores tend to be on the high side.

Loss of ego is something golfers must learn to contend with and cover up with a casual shrug. Particularly on the first tee. That's where everyone is standing around waiting for you to hit the ball and secretly hoping that you'll botch it.

Another test of one's cool is when your ball lands in the bunker right under the lip. You take your stance determined to blast the ball out — and it rolls back down. You whack at it again — and it digs deeper into the sand. Sweat appears on the forehead, and anxiety is short-circuiting your concentration. You take another go at it — and it rolls back down. You want to cry. But nothing lasts forever, and with the next try, you're out. So what if you sculled it across the green and down the hill!

Local golf clubs have a quaint custom of turning on the sprinklers about 6 p.m. So Brookhaven Golf Association members, who play their matches after work, have an additional obstacle to face. Your ball insists on landing right next to the sprinkler head, so it becomes a contest between you and the sprinkler. Can you drive it out of there before the sprinkler comes around and drenches you? Tune in next week.

So, if golf is nine-tenths frustration and puts a severe strain on your ego, why do so many people doggedly head for the golf course week after week? Because, now and then ball and club come together the way they are supposed to, and the ball soars sweet and straight. Often enough to keep you going, the ball doesn't roll around the cup but drops with a satisfying plop right into it. Your score is such that you don't need to blush. It's enough to make you jump for joy. You've succeeded in coordinating head, heart and skill and, next week, you're going to go out and do it again.

— Bernice Petersen

New Water Tower For More Water Power

The latest addition to BNL's skyline: a brand-new, 178-foot-high water tower on the eastern end of the Lab site.

Its erection last month marked the start of the final stage of a $12 million project to upgrade the Laboratory's utility systems, with $5.8 million allotted for the water systems, and the remainder for the steam systems on site.

Studies in 1977 and 1978 revealed a need for greater overall firefighting capabilities and more water pressure on the eastern end of the site. The funding was approved in February, 1983. According to Project Engineer Mark Culp, the tower will be fully erected by the end of this month, and paint will be applied to the structure through the end of August.

The existing water tower, meanwhile, will be repaired and repainted for the following three months while the new one assumes its role. The old tower, which has served the Laboratory since 1941, is located next to the police group's headquarters, and will be back in use after its repairs.

The new tower can hold up to a million gallons of water, 700,000 more than the old one. At full capacity, the entire steel structure plus the water weighs about nine million pounds, and is designed to resist winds of up to 100 miles per hour. It stands 250 feet above sea level, about the same as the old one, and will maintain the average site water pressure at 65 pounds per square inch.

A critical stage in the project is the paint job. Four coats of vinyl enamel paint will be applied, and it is crucial that the paint protect the steel structure from rust.

In all, there are nine welders from the contractors, Chicago Bridge & Iron, and two operating engineers, along with a BNL fireman at all times, working at the site. In addition, BNL engineers and the tank's designers inspect the welding as it is completed by the workers.

Peter Horton

A new water tower on the horizon.

— Maurice DuBois Jr.

(Maurice DuBois Jr. is a summer student in the Public Relations Office).

PC Users Group

The next meeting of the PC/Workstations User Group will be on Tuesday, June 18 at 10:00 a.m. in the Applied Mathematics Department Seminar Room. Representatives of IBM will give a presentation on Local Area Networks.

A Synthesis of Music and Science

Musicians who like science, and scientists who appreciate music will enjoy a free lecture/demonstration given by Vladimir Chaloupka, on Friday, June 21, at 8:30 p.m. in Berkner Hall. Chaloupka, an associate professor of physics at the University of Washington, will use Robert Hofstadter's Pulitzer Prize-winning book as a base for his lecture, entitled "Godel, Escher, Bach and Hofstadter."

Godel's theorem and its many implications will be presented, examples of J.S. Bach's canons and fugues will be played and analyzed, and Escher drawings will be shown and discussed. The lecture is derived from a seminar given by Chaloupka at the University of Washington, and it will be presented at the Lake Chelan Bach Festival in July.

Besides his professional field of interest, experimental elementary particle physics, Chaloupka admits to a fascination with music, particularly the study of interconnections between the physical properties of sound, and its perception and analysis by the brain. In his free time, Chaloupka plays and analyzes keyboard works of Bach on the piano, harpsichord, organ and Commodore 64.

Peter Horton

Vladimir Chaloupka at a keyboard.

Child Alert

The BNL summer program has started and that means many more people on site, among them, children who will be out exploring on foot and on bicycles. In the interest of safety, BNL drivers should be alert to the presence of these youngsters and drive accordingly. At the same time, parents are asked to see to it that their children stay in the housing area and do not roam around the core of the site.

PRTs

(Continued)

In line with the new policy, the HFBR has a new, expanded Program Advisory Committee, which consists of user representatives from universities, industry, other labs and BNL. This group creates general policy. Sitting as part of this committee are six chairmen of the subcommittees which pass judgment on proposals in six research areas — biology, chemistry, solid state physics, nuclear physics, positron physics and materials sciences.

The addition of a guide hall which would provide 10 new experimental stations at the HFBR, has been proposed and is awaiting approval. In the meantime, designs are going ahead for two new beam lines which will be built either in the new guide hall, or strategically squeezed into the existing building. In any case, the PRT policy for new beam lines at the HFBR will mirror that so successfully employed at the Light Source.

BROOKHAVEN BULLETIN

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Item

Thomas W. Mooney, an AGS operator, has a way with words. For Valentine's Day he submitted a poem to a local radio station, and he and his wife won a New York weekend, complete with hotel, Broadway show and limousine. Last Monday morning, he dashed off a jingle advertising a lumber company for a contest at the same radio station. Lo and behold, he won a $400 table saw. Maybe Tom should get into the word business.

Equipment Demo

Representatives of ProMinent Fluid Controls, Inc., manufacturer of electronic and motor driven chemical metering pumps, monitors, controllers and disinfection equipment, will demonstrate their products in Berkner Hall on Monday, June 17, from 11 a.m. to 1:30 p.m.

Stockroom Closing

Building T-86 will be closed for inventory on June 20 and June 21. Please make all necessary withdrawals of stock prior to 3:00 p.m. Wednesday, June 19. This will give the Supply and Materiel Division sufficient time to prepare for the inventory. Emergency requirements should be processed through John Scharpeger, Ext. 2974.

Arrivals & Departures

Arrivals

Asao Kusumegi ..... Instrumentation
Helmut T. Satz ..... Physics
Stephen G. Usmar ..... Physics

Departures

This list includes all employees who have terminated from the Laboratory, including retirees:

Selena R. Ayala ..... P&GA
Daniel S. Collins ..... P&GA
Michael T. Foran ..... DAS
Merrill R. Osheroff ..... Medical
Chariclia I. Petridou ..... Physics
Jeffrey S. Rubenfeld ..... MIS
David S. Wise ..... Biology

IBEW Meeting

Local 2230, IBEW will hold its regular monthly meeting on June 24, at 6 p.m., in the Knights of Columbus Hall, Railroad Ave., Patchogue. There will also be an afternoon meeting at 2 p.m. for shift workers in the Union office at 31 Oak Street, Patchogue. On the agenda will be regular business, committee reports, the president's report and the report of the Negotiation Committee.

Corrections

In last week's "Pick Your Own Strawberries" the cost at the Fritz Lewin Farm should have read 65¢ quart, not 85¢. And we reversed identities in two pictures in "Speaking Out" - Pam Spencer and Sheryl Golden. Sorry everybody.

This Investment Pays High Interest

The first time Lee Rogers gave blood, it was because the Army promised him a weekend leave if he participated. That was in 1952, and he recalls having a fun weekend.

Since then, realizing the desperate need for donors, he has given close to four gallons of his blood.

Both veteran and first time donors will have the opportunity to save up to five lives with a single donation during BNL's Summer Blood Drive next week. Anyone in good health between the ages of 17 and 65, weighing at least 110 lbs., is eligible to make a donation on Wednesday, June 19, and Thursday, June 20, from 10 a.m. to 3 p.m. in the gymnasium.

But while giving blood won't always guarantee having a good time, it can promise to literally pump life into people in desperate need. Eight years ago, Dick Melucci's wife survived severe hemorrhaging when 14 pints of her blood were replaced with blood from donors. Since then, Melucci has become a regular donor.

Bill Leonhardt, who gave for the first time while he was in Vietnam, has given almost three gallons since, and sees it as "a sort of investment" for others.

In fact, this investment takes only about a half hour of your time to make. Along with a few brief questions about your medical history, a drop of blood is analyzed, and your temperature, pulse and blood pressure are taken. The actual blood donation takes just five to ten minutes, and you can treat yourself to some refreshments afterwards.

Four years ago, BNL's summer total was over 800 pints, but only about half as many donors participated last year. The Long Island Blood Service has set this year's goal at 600 pints, but program coordinator Elaine Zukowski says she "wouldn't mind having another 800." If you have any questions, please contact Zukowski or L.C. Emma at Ext. 5126.

Many people are apprehensive about giving blood for the first time, but aren't really sure why. Karen Cone, who has given over three gallons in the last 12 years, had a friend go with her the first time, but now considers it "more like a privilege" each time she donates. Ron Mulderig remembers being "nervous. I had heard all the horror stories, but it turned out to be a routine thing." Carol Roberts overcame any fears she had "out of guilt!" and has given over a gallon since the early 1970's. "It's the only time," she says, "that you can be lying perfectly flat on your back and actually be doing something for mankind."

BERA News

Tennis

All courts will be reserved on Saturday, June 22, from 9 a.m. to noon, for team tennis between BNL and Miller Place.

The annual tournament consisting of five events (mixed, men's and women's singles, men's and women's doubles) will begin the weekend of July 20. On this weekend and that of July 27, the tournament will take priority over all other play. Players may sign up at the BERA Sales Office from June 21 through July 9. The draw will be posted by July 11 at the Sales Office and at courtside. Competitors are encouraged to play first-round matches as soon as the draw is posted. The tournament is open to Lab employees and spouses, and the entry fee is $2.00 per person, per event, payable at sign-up.

Those interested in playing doubles but who are without partners, should sign up anyway. The Tennis Committee will try to find partners.

It would be appreciated that small children be kept off the tennis courts when other people are playing.

Reminder: The sign-up system for the courts is in effect.

Softball

League I

Makeup Games

Six Pax 8 — Scram 1
Cool 'n Gang 7 — Phoubars 5
Blue Jays 4 — Ravens 3

Week of June 3

Phoubars 20 — Moles 0
Six Pax 9 — Ravens 3
Blue Jays 11 - Scram 1

League II

Rained Out

League III

No Names 9 — Nads 1

League IV

Mole-Esters 9 — Who Cares 6
Kidz-R-Us 12 — Turkeys 8
Septembers 21 — Farmbusters 20

League V

Mudville Sluggers 17 — No Feedback 16
Foul-Ups 12 — Space Kadets 10

Gym Closing

Because of the BNL Blood Program, the gymnasium will be closed Tuesday, June 18 through 5:00 p.m. Friday, June 21.

Hispanic-American Society

The Hispanic-American Society will meet on Tuesday, June 18 at 11:45 a.m. in Room A, Berkner Hall, to discuss upcoming events. Members and others wishing to join the club are urged to attend.

On a bright and windy May 19, 276 runners, including 95 male/female couples, completed the Ted's Twosome Five-Mile Race organized by the BNL Roadrunners to remember former club president, Ted Landry, who was killed while bicycling last July. After the race, Bernie Silverstein (S&EP) photographed some of the principals sharing the satisfaction of knowing that sufficient funds had been raised to allow the establishment of a scholarship for graduate science students at Landry's graduate school, the University of New Hampshire: Race Directors Bill Thomlinson (left), NSLS, and Gus Prince (right), DNE; Elaine Landry, Ted's widow, who was involved in all phases of the race's organization; and U.S. National Olympic Coach Bill Squires, who coached Landry and who ran a clinic, attended by about 80 people, the evening before the race. The first place BNL couple, was Wen-Shi Yu (DNE) and Joe Bauernfeind (AGS), with a combined time of 1:07:48.

Upton Nursery School is enrolling children for the 1985-86 school year. Enrollment is open to three- and four-year-olds of BNL employees and their families. Classes are two or three mornings per week and are non-academic, offering many activities and social experiences. To register your child, call Joan Rice at 924-8880.

Reminder

The Women in Science cocktail party will be held on Tuesday, June 18 at the Brookhaven Center from 5-8 p.m. For information, call Caroline Kramer, Ext. 2673.

Diners Note

The Cafeteria will be closed on Saturday, June 15. On that day, snack bar service will be available from 9:00 a.m. to 2:00 p.m. at the Brookhaven Center.

Cafeteria Menu

Week Ending June 21

Monday, June 17		
Chicken noodle soup	(cup)	.65
	(bowl)	.85
Ham & potato au gratin & 1 veg.		2.15
Cheese omelet & 1 veg.		2.10
Hot Deli: Sloppy Joes		2.20
Tuesday, June 18		
Cream of potato soup	(cup)	.65
	(bowl)	.85
Veal pattie Parmesan & 1 veg.		2.25
or w/spaghetti		2.45
Chicken burrito & 1 veg. w/hot sauce		2.15
Hot Deli: Smoked turkey breast	(bowl)	2.35
	(roll)	2.55
Wednesday, June 19		
Lentil soup	(cup)	.65
	(bowl)	.85
Sauerbraten & potato pancake		2.30
Seafood Newburg on rice		2.30
Hot Deli: Pastrami	(bread)	2.10
	(roll)	2.30
Thursday, June 20		
Navy bean soup	(cup)	.65
	(bowl)	.85
Beef burgundy on rice		2.25
Special: Stuffed pork chop w/red cabbage & applesauce		2.00
Hot Deli: French bread pizza		2.25
Friday, June 21		
New England clam chowder	(cup)	.65
	(bowl)	.85
Macaroni & cheese w/1 veg.		2.10
Seafood platter		2.35
Hot Deli: BBQ top round of beef	(bread)	2.10
	(roll)	2.30

Farmers' Market every Wednesday from 11:30 a.m. to 1:30 p.m., in parking lot on Brookhaven Avenue, opposite the cafeteria.

Classified Advertisements

Placement Notices

The Laboratory's placement policy is to select the best-qualified candidate for an available position, with consideration given to candidates in the following order of priority: (1) present employees within the department, with preference to those within the immediate work group; (2) present employees within the Laboratory as a whole; and (3) outside applicants. In keeping with the Affirmative Action plan, selection decisions are made without regard to age, race, color, religion, national origin, sex, handicap or veteran status.

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all non-scientific staff positions; second, to give employees an opportunity to request consideration for themselves through Personnel; and, finally, for general recruiting purposes. Because of the priority preference policy stated above, each listing does not necessarily represent an opportunity for all candidates. As a guide to readers, the listings are grouped according to the anticipated area of recruitment.

Except when operational needs require otherwise, positions will remain open for one week following publication date.

For further information regarding a placement listing, contact the Employment Manager, Ext. 2882.

SCIENTIFIC POSITIONS OPEN: The following staff positions are open. Candidates may apply directly to the department representative named, or through the office of Scientific Personnel, Ext. 3338.

STRUCTURAL MOLECULAR BIOLOGIST, Biology Department — Staff position at the small angle scattering facility of the NSLS. Contact: Geoffrey Hind.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

2269. ADMINISTRATIVE POSITION - Requires excellent organizational and communications skills, extensive knowledge of complex Laboratory procedures and policies and an employment history which demonstrates experience in work that requires accuracy, precision and flexibility. With frequent time constraints, will function as office manager and administrative aide to office management. Secretarial skills (MICOM and shorthand), and the ability to expertly set priorities is required. Prior supervisory experience is preferred. Budget Office. Director's office.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2270. SYSTEMS/DP ANALYST (2 positions) - Requires bachelor's degree in a pertinent discipline and two to four years' relevant experience in COBOL. Required experience includes programming on-line data base business systems. Knowledge of Hewlett Packard 3000 hardware is highly desirable. Management Information Systems Division.

2271. TECHNICAL POSITION - Requires an AAS degree or equivalent in electronics. Demonstrated systems troubleshooting abilities and good communications skills are necessary. Background experience in high/low level rf systems, high power pulsed power supplies, digital electronics and/or computer operations is desirable. Rotating shift work required. Alternating Gradient Synchrotron Department.

2272. TECHNICAL POSITION - Requires AAS degree or equivalent experience in mechanical technology. Experience in the operation and maintenance of large capacity process water cooling systems, including pumps, cooling towers, heat exchangers, mixed bed demineralizers and pneumatic controls is necessary. Alternating Gradient Synchrotron Department.

2273. TECHNICAL POSITION - Requires an AAS degree in electronic technology or equivalent and substantial experience operating and maintaining a large computer network. Candidate will assist in the design and implementation of the computer network. Will also install and maintain computer workstations, data terminal equipment, modems data switching devices, and local area network facilities. Management Information Systems Division.

Autos & Auto Supplies

84 VOLVO DL - 5 spd., a/c, p/s, p/b, 30k highway miles, $12,000. 587-4965.

72 DODGE DART - 4 dr., a/t, a/c, p/s, p/b, am/fm stereo, 20 mpg, good cond., $950. Sandy, Ext. 3369 or 286-1022.

75 CORVETTE STINGRAY - white, full power a/c, T-roof, 42k, tilt wheel, am/fm, $7,500. 475-0705.

72 TRAILER - sleeps six, good cond., tandem wheels, $2,100 neg.; 73 Camaro, needs work, body good cond., $700. Ext. 2964.

79 YAMAHA 650 - Special, 10k, new tires, battery, excel. cond., $1,100. Ext. 2223 or 929-6421.

71 CHEVY IMPALA - V8, a/c, p/s, p/b, 82k mi., good cond., $600. Ext. 2673 or 744-8632 after 6 p.m.

75 FIAT 128 - 4 spd., am/fm, good eng., (2) new tires, needs work, best offer. Ext. 3714.

77 DATSUN B210 - hatchback, 4 spd., new clutch and brakes, 63k mi., $1,500. 475-7488 eves.

CAMPER - pick up type, sleeps four, stove, heater, refrig., etc. Ext. 7668 or 878-1923 after 6 p.m.

RADIAL TIRES - Triumph, steel belted, w/w, on rims, P235R15x75, 2k mi., (4) $100. Ext. 4244 or 654-8438 after 6 p.m.

74 CHRYSLER NEWPORT - 4 dr., high mi., $300 or best offer. 727-5912.

71 SCOUT PARTS - grill, roof w/rear window, windshield, best offer takes all. Ext. 2023 or 585-8809.

74 COUGAR XR7 - new brakes, radiator, exhaust system, 351 V8, Jensen stereo, excel. cond., $950. 246-6180 days or 928-1011 after 6 p.m.

78 OLDS CUTLASS - Supreme, 8 cyl., a/t, a/c, p/s, p/b, am/fm cassette, very good cond. Roseann, Ext. 3199 or 475-6622.

71 TRIUMPH TR-6 - good cond., 4 spd., new top, green, 89k mi., $2,500. 473-8292 or 928-0297 after 6 p.m.

71 PLYMOUTH DUSTER - 6 cyl., 2 dr., new brakes & muffler, $900. 924-7889 after 5:30 p.m.

78 FORD STATION WAGON - new engine, new trans., new paint, mint cond., $2,000. Ext. 2333.

76 COUGAR XR7 - p/w, p/s, p/b, a/c, radials, CB, stereo, runs well, looks good, $1,000. Dan, Ext. 4987 or 698-7322.

76 GMC PICKUP - 1/2 ton, 4 WD, full time drive, cap, 6 cyl., a/t, runs well, $2,500. 589-0308.

78 FORD FIESTA - 74k mi., excel. cond., good mpg, 4 spd., 2nd owner. Ban, Ext. 3098 days/eves.

80 VW RABBIT - 4 dr., 4 spd., excel. cond. Scott, 399-1157 or 661-3777.

72 FORD GALAXIE - runs well, new exhaust, brakes, battery, $750. John, 732-5071.

70 DODGE D-100 PICKUP - Lab truck, low mi., runs great, 4 spd. stick, best offer. Bob, Ext. 3145.

MYERS SNOW PLOW - 6 ft., bolts on Bronco frame, $250. Dave, Ext. 4561.

84 KAWASAKI KLT 110 - trike, very good cond., runs great, $800 firm. 929-6093 eves.

70 NOVA - a/t, p/s, runs well, new parts, good engine & trans., body needs some work, $550. Walt, Ext. 2907 or 698-0576.

76 FORD TORINO - p/s, p/b, a/c, $1,400 or best offer. Al, 231-4613 after 5 p.m.

64 FAIRLANE - sports coupe, V8, a/t, p/s, buckets, extra parts, dependable, recent inspection, $525. 929-3566.

ALTERNATOR - for Chrysler slant 6, $10; (2) headlights for '74 Dodge, $15; (3) steel belted tires & rims, $10. Victor, Ext. 2395.

81 CAMARO BERLINETTA - white, V6, fully loaded, am/fm cassette, t-tops, 46.5k mi., $7,500. 281-9080.

74 MONTE CARLO - white, red roof, gauges, a/c, full power, tilt wheel, excel. cond. Ed, Ext. 3840.

78 HONDA CIVIC - 4 spd., am/fm, new exhaust, $1,300. Sherie, Ext. 4478 or 924-6937.

83 MOPED - 49.9cc, made in Italy, class B, 25-35 mpg, lights, mag wheels, cost $550, sell for $200. 744-1429.

75 MGB - convertible, am/fm, new top, 84k mi., good cond., $2,600. John, Ext. 7671.

78 CHEVY VAN - 1 ton, low mi., excel. cond., $3,000. 563-2847 after 5 p.m.

76 GREMLIN - 2 dr., hatchback, running transp., $200 or best offer. Luis, Ext. 7327 or Miggie, 698-6585.

84 PLYMOUTH TURISMO - 2.2 litre, tinted windows, stereo, low mi., like new, 1 yr. warranty, $5,800. 563-2847.

81 FIAT SPIDER 2000 - silver, red w/black int., new rag-top, 57k mi., Pirelli P.6, fm/cassette, $5,000. Ext. 7132 or 878-6436.

VAN SEAT - high back, tan naugahyde w/swivel base, $50. 473-1456.

80 CHEVETTE - a/t, no rust, excel. cond., $1,800. 281-0973 eves & weekends.

85 MERCEDES 500 SEL - loaded, low mi., leather int., metallic brown. 941-4999.

TIRES - (2) radial, GR78-15, (2) snow, GR78-14, mounted on GM rims, $10-$15 ea. Ext. 3312.

77 VW RABBIT - good cond., am/fm, new tires. Harvey, Ext. 3758 or Sally, 821-1726.

FAIRING - Vetter, Quicksilver, complete with mounting hardware, brand new cond. Frank, Ext. 3120.

Boats & Marine Supplies

26' PACEMAKER - 1968, SF, 318 cu. Chrysler, f/w cooled, sleeps 4, stand-up head, stove, 110 V/12 REF, VHF, DF recorder, excel. cond. Don, Ext. 5329 or 878-2215 eves.

20' FURLING JIB - from O'Day, excel. cond., original cost $325, sell for $100. Ext. 4680 or 286-1331.

16' SAILBOAT - Paceship, fiberglass, cuddy cabin, centerboard, 4 HP Evinrude, good cond., $1,500. Marty, Ext. 4290/4857 or 286-5897 after 5:30 p.m.

24' GARVEY - 1975, 8' beam planked, glassed, 70 HP Evinrude, $1,500. 586-8431 after 6 p.m.

TRAILER PARTS - assorted, for small boat trailer, all sandblasted, $20. Gary, Ext. 7518.

22' CATALINA - 1982, sloop, immac., in water. 589-5490.

24' WINNER - I/O Mercury, flybridge, galley, porta-potty, sleeps 4, dual-batteries, outriggers, full canvas, VHF, CB, stereo, depth finder, $8,500. 277-5531.

18' HOBIE CAT - dual trapeze, trailer, complete, excel. cond., $3,100. Bob, Ext. 2897 or 473-3693 after 6 p.m.

Miscellaneous

JIG SAW - 18", throat w/motor, Craftsman, $75. Ext. 2246.

PIANO - Wurlitzer, upright, ebony, mint cond., $900. Helen, 331-1651 days or 924-6945 eves./weekends.

RUG - 9 x 12, solid rust, best offer. Gail, Ext. 3338.

CIDER/WINE PRESS - complete outfit, $75.; wet suit, med. size, price negotiable. 286-0939.

TELEXTENDER - for Pentax screw mount, 2x, $8; bar books for making drinks. Susan, Ext. 4267.

ANSWERING MACHINE - excel. cond.; new bed frame, $10; basketball hoop, $5; triple warmer server, $10; weights, 90 lbs., $10. Tony, Ext. 7772.

SIAMESE CATS - (1) kitten, some adult cats, without papers, reasonable. Whitey, Ext. 2913 or Ramona, 928-3088.

TABLE - wrought iron w/glass top, (4) matching chairs, excel. cond., $95. Ext. 4449 or 751-8403 after 6 p.m.

SMALL CHEST FREEZER - 2.5 cu. ft., old, works fine, $20. 286-0237.

RADIAL SAW - new, 10" combination w/leg set, valued at $569.98, asking $350. 924-6582.

COAL/WOOD STOVE - w/coal bin and one ton coal, excel. cond., $475. Ext. 5042 or 467-8297.

POOL LADDER - three steps, stainless steel, for in-ground swimming pool, $30. Ext. 4680 or 286-1331.

WOODBURNING STOVE - Garrison I, soapstone top, $150. Pat, Ext. 2452 or 722-4706.

ELECTRIC GUITAR - Gibson, walnut, w/original engraved whammy bridge, Dimarzio SD pick ups, good cond., w/hardcase, $250. Rand, 751-1149.

STEREO - radio, cassette, am/fm, graphic equalizer, detachable speakers, $65. Ext. 7144.

TWIN REVERB - Fender, pre-C.B.S., Celestion speakers, $325; Ampeg reverberocket, tube preamp, both $125. Dave, Ext. 4256.

COLLIE PUPS - 7 wks. old, champ sired, sable/white, males, shots, fantastic w/children, $250. 924-3756.

COLOR TV - Toshiba, 11", orig. owner, $100. Ext. 3098.

SEARS TABLE SAW - hardly used; wood lathe, no motor, never used; 16" Echo chain saw, like new. Bob, Ext. 3145.

INSTANT CAMERA - Polaroid Spirit, new, in orig. carton, $20. Dick, Ext. 2911.

PHONO CABLES - shielded, new, 10 ft. length, 10 for $5. Walt, Ext. 7154.

POOL - alum., 15'x30', incl. through wall skimmer, filter, motor/pump, vacuum & hoses, chemicals, etc., needs liner, $350. Walt, Ext. 2907 or 698-0576.

MR. COFFEE - $8; 19" box fan, $10; Ethan Allen sofa, colonial style, 90", good cond, $200. 929-3566.

ULTRALIGHT - Weedhopper, model C, w/trailer, excel. for beginner, $1,500. Bob, 924-5511 or 744-3289.

PLATFORM ROCKER - green vinyl, $5; lawn spreader, $5; white lamp, 39", $5. 281-7844.

BICYCLE SEAT - for child, $10; mooring anchor, chain, buoy & p.u. buoy, 150 lbs., $200. Sue, Ext. 2050.

GIRL'S BICYCLE - 24", Huffy, 10 spd., good cond., $35. Jack, Ext. 2907.

DESK - (7) drawers, cost $1,000, sell for $50. 475-4596.

B&W TV - $45; 3 spd. hand mizer, $8; infant rocking seat, $8. Annette, Ext. 3190.

PIANO - Acrosonic Spinet, 39" H, recently rebuilt action & tuning, $500. Bill, 585-2563 eves.

STROLLER - 1984 Cosmos, dark blue, excel. cond., basket & body, orig. cost $150, asking $95. John, Ext. 3292 or 475-4370.

KITCHEN DINETTE SET - $60; small vacuum cleaner, $30. Steinar, Ext. 3449.

COLOR TV - 16", tube model, plays but needs some work, $20. Al, Ext. 4473.

CHEST FREEZER - Amana, 19 cu. ft., $150. 924-4373.

FIREPLACE - free standing, black & red w/stovepipe & access., like new, $250. 473-1456.

REFRIGERATOR/FREEZER - 10.5 cu. ft., excel., 10 mos. old, $180. Ext. 3234.

GE ELECTRIC DRYER - small apt. size, 110V, $50; Speed Queen heavy duty deluxe washer, hardly used, $300; 12'x13' gold/brown/orange tweed rug, good quality nylon, $75; 10'x12' green/tan/rust striped nylon rug, $40; am/fm stereo w/record player in 2'x5' cabinet, $25. 475-5543.

TENT - 9'x9', Morsan, w/screen porch, sleeps 4, excel. cond., $60; foam mattress, $12. Ext. 4341 or 475-4005.

MAN'S BATHROBE - small, light weight, navy color, brand new, cost $22, sell for $11. Rich, Ext. 4134.

DISHWASHER - Westinghouse, under counter, new, never used, $100; 16" window fan, 3 spd., elec., reversible, adj. panels, new, in orig. carton, cost $49, sell for $25. 924-3236.

LAWN TRACTOR - Sears, with mower & sweeper, very good cond. Frank, Ext. 3120.

Free

KITTENS - (5) black w/white paws, medium to long hair. Bob, 473-3777.

MATTRESS - king size, 76 x 80. 724-1135 after 12 noon.

PUPPIES - (2) male, (1) female, large, Lab/Benji mix, in need of loving homes. Miriam, 473-5060 after 6 p.m.

GUINEA PIGS - (2) females, complete with home & supplies. Ext. 7996.

Yard Sales

BALDWIN - Felix Ct., Milburn to Brookwold to Felix, June 15 & 16, tools, hardware, typewriter, toys, misc.

Car Pools

COMMACK - need 4th person for on time pool, 8:30 to 5:00, door-to-door. Bonnie, Ext. 2876.

NORTHPORT/FT. SALONGA - 8:30-5:00, need 1 or 2 more riders. Walt, Ext. 7154 or Eva, Ext. 7772.

KINGS PARK - Smithtown area, need 1 new driver. Tony, Ext. 4024.

Real Estate

Real Estate advertised for sale or rent is available without regard for the race, color, creed or national origin of the applicant.

For Rent

FLORIDA - West Coast, 90 mi. west of Orlando near Weeki-Wachi, 2 bdrms., vacation home in developed Deltona community, weekly/monthly. Ext. 4530 or 261-2719.

WHITE MOUNTAINS, NEW HAMPSHIRE - 3 bdrms., 2 baths, new condo, private deck, fireplace, heated pool, clubhouse, Jacuzzi, tennis courts, hiking trails, near all area attractions, weekly, $375. (914)232-4039.

HILTON HEAD ISLAND, S.C. - 2 bdrm. condo., 2 baths, tennis, golf, swimming pool, $400/wk. Ext. 3145 or 585-9149 after 4 p.m.

FARMINGVILLE - 1 bdrm. apt., $500 inc. all plus cable. 732-2141 before 1 p.m.

For Sale

SOUND BEACH - 2 bdrm. house, full bath, den, deck to above ground pool, 1/2 block from beach, $80,000. 821-0187 before 2 p.m.

RIDGE TOWNHOUSE - 3 bdrms., 1-1/2 baths, wood/coal stove, central a/c, w/all appl., $78,900. Ext. 3541 or 924-4070.

ADIRONDACKS - 6 acres, 20 min. from Lake George, waterfront, 600', terms avail., swimming, boating, etc. Pat, Ext. 3376 or 924-3674.

YAPHANK - 2 bdrm. condo., 1-1/2 baths, mint cond., full basement, pools, tennis, clubhouse, 2 mi. to Lab, $82,000. Henry, Ext. 4547 or 924-6688.

Wanted

AIR CONDITIONER - small, reasonable. Ext. 7699 or 821-1435.

SLIDE PROJECTOR - 35 mm, in working order. Jerry, Ext. 2198.

BICYCLE RIDERS - for the Multiple Sclerosis Charity Tour, June 30th. Ext. 4841.

WITNESS - to accident involving 1981 brown, 4 door Datsun in Brookhaven Center parking lot during Cooking Exchange Dinner on 5/31. Blanche, Ext. 2873.

HOUSE TO SIT - experienced, caring, reasonsible, free, any period June 23 to Sept. 15. J. Allentuck, Ext. 2412.

DEHUMIDIFIER - working, good cond. Tony K., Ext. 3499 or 929-6156 eves.

LOVING HOME - for kittens, black, white, tiger, also white spayed female, litter trained. Ext. 2959 or 751-4201.

CEMENT MIXER - 2-1/2 cu. ft., Sears type, motor driven. 286-8886 eves.

SCIENCE MAGAZINE - May 24, 1985 issue. D. Greenberg, Bldg. 490.

ROLLER SKATES - to be donated to boy's hockey club. Ray, Ext. 5042.

RECORDS - 45 RPM & some LPs, of the '50s & '60s era. Frank, Ext. 3120.

GOOD HOME - prefer ranch for 6 yr. old pedigree border Collie, reg. International Sheep Dog Society. Jim or Tom, Ext. 3703.

OUTBOARDS - or outdrives, 1970 & up, running or not, for cash. Jim or Bill, 567-3417 or 281-6498.

LAWNMOWERS - prefer Sears, oldies not running o.k. Bill, Ext. 3848 or 281-6498 eves.

MANNEQUIN - dress form, want to make own clothing. 744-4611 after 7 p.m.

HOUSE - or apt., 2-3 bdrms., for family of 4, E. Suffolk near R.R./shops, reasonable. Saed, Ext. 4463 or 751-2422.

BICYCLE - 10 spd., racing model, reasonable price, must be in good cond.; barbell weights, steel plates, reasonable price, will consider sets. John, Ext. 3292 or Chris, 286-1348.

CAPTAIN - who needs mate for sailing larger boat, 26 ft. & up, will aid congenial captain while learning ropes. John, Ext. 2671 or 821-2585.

ANSWERING MACHINE - want good offer. Maurice, Ext. 5056.

LOWER UNIT - for 9.9 HP Chrysler outboard. Gary, Ext. 7518.

HOUSEMATE - to share large 4 bdrm., 3 bath house, 20 min. to Lab, washer/dryer, sundeck, $233/mo. plus 1/3 util. Ext. 2521 or 928-8379.

AUTOMOBILE - English professor wishes to rent full size auto from July 25 to Aug. 28; housing for married couple, for 1 to 3 mos. beginning July 8. Lynn, Ext. 3827.

RESPONSIBLE PERSON - to care for 2 children in our house. Harvey, Ext. 3758 or Sally, 821-1726.

Classified Ad Policy

Deadline is 4:30 p.m. Friday for publication Friday of the following week.

1. The Brookhaven Bulletin's classified section may be used only by active and retired Laboratory employees.
2. All items for sale or rent must be the advertiser's property.
3. Ads for material acquired for resale in association with a full or part-time business cannot be accepted.
4. Ads for the sale or trade of firearms will not be accepted.
5. Ads not carried because of space restrictions will be held for publication in the next issue.
6. Ads are run only once and must be resubmitted if they are to be repeated. One ad per person per week.
7. **Property for sale or rent cannot be accepted on this form. Special Real Estate Ad Forms are available at the office of the Brookhaven Bulletin, Building 134.**

☐ For Sale: Autos & Auto Supplies
☐ For Sale: Boats & Marine Supplies
☐ For Sale: Miscellaneous
☐ Car Pools
☐ Lost & Found
☐ Wanted
☐ Free
☐ _____

Please print your ad below in 15 words or less using one word per block. Include name and phone number to call.

Note: The following must be completed for your ad to appear.

NAME (Please Print) .....

Employee's Signature ..... Life No. ..... Ext. .....

Send to: Brookhaven Bulletin, Building 134 (Ext. 2345)